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IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Application of:

Dyott et al.

Application No: 09/921,166

Filed: August 2, 2001

For: *Reduction of Linear Birefringence in
Circular-Cored Single-Mode Fiber*

Examiner: To be Assigned

Art Unit: 2784

Attorney Docket No. KVC-038.01

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#4
D. Scott
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CERTIFICATE OF FIRST CLASS MAILING

I hereby certify that this correspondence is being deposited with the United States Postal Service as First Class Mail, postage prepaid, "Post Office to Addressee", in an envelope addressed to the Commissioner for Patents, Washington, D.C. 20231, on September 12, 2002.

Kerry Richard

SUPPLEMENTAL INFORMATION DISCLOSURE STATEMENT
UNDER 37 CFR § 1.97 (b)(3)

Commissioner for Patents
Washington, DC 20231

Sir:

Submitted herewith on Form PTO-1449 is a list of publications known to Applicants and/or their Attorney/Agent in compliance with the requirement of 37 C.F.R. § 1.56. A copy of each publicly available document is also being submitted herewith.

Applicants have cited for the Examiner's consideration certain issued U.S. patents and co-pending U.S. patent applications that are owned at least in part by the assignee of this application, that describe subject matter related to the present invention. The co-pending applications are listed herewith in accordance with M.P.E.P. 609 III.D which states: "Applicants may wish to list U. S. patent application numbers on other than form PTO-1449 or PTO/SB/08A and 08B format to avoid the application numbers of pending applications being published on the patent. If a citation is not printed on the patent but has been considered by the examiner in accordance with this section, the patented file will reflect that fact as noted in subsection III.C(2) above."

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No copies of the co-pending applications have been provided. If the Examiner wishes to have copies of the co-pending applications, Examiner should contact the Attorney of record.

Our Docket No.	S.N.	Filing Date	Title
KVC-19.03	09/615,166	7/13/00	Reduced Minimum Configuration Fiber Optic Current Sensor
KVC-22.02	09/337,223	6/22/99	Polarization Transformer
KVC-22.03	09/930,738	8/15/01	Current Sensor
KVC-22.04	10/147,148	05/16/02	Polarization Transformer
KVC-33.02	10/034,541	12/21/01	Apparatus and Method for Electronic RIN Reduction in Fiber-Optic Sensors
KVC-33.03	10/124,186	04/17/02	Apparatus and Method for Electronic RIN Reduction in Fiber-Optic Sensors Utilizing Filter with Group Delay
KVC-34.01	09/796,050	02/28/01	Faraday-Effect Current Sensor With Improved Vibration Response
KVC-35.01	09/906,019	07/13/01	Method For Controlling Fiber Optic Sensor Scale Factor
KVC-36.01	09/615,181	07/13/00	DSP Signal Processing For Open Loop Fiber Optic Sensors
KVC-37.01	09/921,383	8/02/01	Decreasing the Effects of Linear Birefringence in a Fiber-Optic Sensor by Use of Berry's Topological Phase

Applicants have listed dates of publication on the attached PTO-1449 for the cited documents based on information presently available to the undersigned. However, the listed publication dates should not be construed that the information in the cited documents was actually published or otherwise publicly available on the date indicated.

Applicants respectfully request that the Examiner consider the listed documents and indicate that they were considered by making appropriate notations on the attached Form 1449.

This submission does not represent that a search has been made or that no better art exists. Nor does it constitute an admission that each or all of the listed documents are material or

constitute "prior art." Further, if the Examiner applies any of the documents as prior art against any claim in the application and Applicants determine that the cited documents do not constitute "prior art" under United States law, Applicants reserve the right to present to the Office the relevant facts and law regarding the appropriate status of such documents. Moreover, the Applicants further reserve the right to take appropriate action to establish the patentability of the disclosed invention over the listed documents, should one or more of the documents be applied against the claims of the present application.


Under 37 C.F.R. §1.97(b)(3), no additional costs are believed to be due in connection with the filing of this disclosure. If, however, a first Office Action on the merits issues in this application bearing a mailing date prior to the date of this Information Disclosure Statement, please charge the appropriate fee as required under 37 C.F.R. 1.17(p) to our **Deposit Order Account No. 06-1448**.

Should there be any questions after reviewing this paper, the Examiner is invited to contact the undersigned at (617) 832-1000.

Date: September 12, 2002

Customer No: 25181
Patent Group
Foley Hoag LLP
155 Seaport Boulevard
Boston, MA 02210-2600

Respectfully Submitted,



Theresa C. Kavanaugh, Ph.D.
Reg. No. 50,356
Agent for Applicants

Form PTO-1449

**INFORMATION DISCLOSURE CITATION
IN AN APPLICATION**
(Use several sheets if necessary)
Docket Number (Optional)
KVC-03801 (04607-3801)Application Number
09/921,166Applicant
Dyott et al.Filing Date
August 2, 2001Group Art Unit
2874**U.S. PATENT DOCUMENTS**

EXAMINER	DOCUMENT NUMBER	DATE	NAME	CLASS	SUBCLASS	FILING DATE IF APPROPRIATE
AB	4,571,650	2/18/86	Ojima et al.			
AC	4,603,931	08/05/86	Ruffman			
AD	4,615,582	10/07/86	Lefevre et al.			
AE	4,630,229	12/16/86	D'Hondt			
AF	4,630,890	12/23/86	Ashkin et al.			
AG	4,637,722	1/20/87	Kim			
AH	4,668,264	05/26/87	Dyott			
AI	4,669,814	06/02/87	Dyott			
AJ	4,697,876	10/06/87	Dyott			
AK	4,712,866	12/15/87	Dyott			
AL	4,733,938	03/29/88	Lefevre et al.			

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	DOCUMENT NUMBER	DATE	COUNTRY	CLASS	SUBCLASS	Translation	
						YES	NO
AM	DE 33 05 104 A1	16 Aug 84	German				X
AN	FR 2 535 463 A	18 May 84	France				
AO	DE 36 15 305 A1	12 Nov. 87	German				X
AP	DE 37 42 201 A1	22 June 89	Germany	X			
AQ	EP 0 551 874 A2	21 Jul 93	EPO	X			X
AR	EP 0 586 242 A1	9 Mar. 94	EPO	X			

OTHER DOCUMENTS

(Including Author, Title, Date, Pertinent Pages Etc.)

AS	Alekseev et al; "Fiber Optic Gyroscope With Suppression of Excess Noise From the Radiation Source", Technical Physical Letters, 24(9): 719-721, (September 1998)
AT	Blake et al., "In-Line Sagnac Interferometer Current Sensor," <i>IEEE</i> , pp. 116-121 (1995).
AU	Blake and Szafraniec, "Random Noise in PM and Depolarized Fiber Gyros", OSA Symposium Proceedings, 1997, OWB2, pp. 122-125.

EXAMINER		DATE CONSIDERED
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EXAMINER: Initial if citation considered, whether or not citation is in conformance with MPEP § 609; Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to the applicant.

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AV	4,740,085	04/26/88	Lim			
AW	4,755,021	07/05/88	Dyott			
AX	4,756,589	01/15/86	Bricheno et al.			
AY	4,765,739	08/23/88	Koizumi et al.			
AZ	4,776,700	10/11/88	Frigo			
BA	4,796,993	01/10/89	Sonobe et al.			
BB	4,815,817	03/28/89	Levinson			
BC	4,842,409	06/27/89	Arditty et al.			
BD	4,848,910	07/18/89	Dupraz			
BE	4,883,358	11/28/89	Okada			

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FOREIGN PATENT DOCUMENTS

	DOCUMENT NUMBER	DATE	COUNTRY	CLASS	SUBCLASS	Translation	
						YES	NO
BF	JP 07209398	11 Aug 95	Japan			English Abstract	
BG	EP 0 686 867 A1	13 Dec 95	European Patent Application				X
BH	EP 0 722 081 A2	17 July 96	European Patent Application				
BI	EP 856 737 A1	5 Aug. 98	EPO				
BJ	EP 0 871 009 A1	14 Oct. 98	EPO				
BK	EP 0 872 756 A1	21 Oct. 98	European Patent Application				
BL	WO98/58268 A	23 Dec 98	PCT (corresponds to 6,023,331)				
BM	WO00/36425	22 June 00	PCT				

OTHER DOCUMENTS
(Including Author, Title, Date, Pertinent Pages Etc.)

BN	Bohnert. et al., "Field Test of Interferometric Optical Fiber High-Voltage and Current Sensors" <i>SPIE</i> , Vol. 2360 pp. 16-19 (Feb. 1994).
BO	Bohnert. et al., "Temperature and Vibration Insensitive Fiber-Optic Current Sensor" <i>ABB</i> , Vol. 2360 pp 336-339 (Feb. 1994).

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BP	4,887,900	12/19/89	Hall			
BQ	4,943,132	07/24/90	Huang			
BR	5,033,854	07/23/91	Matthews et al.			
BS	5,048,962	09/17/91	Kurokawa et al.			
BT	5,074,665	12/24/91	Huang et al.			
BU	5,080,489	01/14/92	Nishikawa et al.			
BV	5,106,193	04/21/92	Fesler et al.			
BW	5,133,600	07/28/92	Schröder			
BX	5,135,555	08/04/92	Coyle, Jr. et al.			
BY	5,289,257	02/22/94	Kurokawa et al.			
BZ	5,289,258	02/22/94	Szafraniec, et al.			
CA	5,331,404	07/19/94	Moeller et al.			
CB	5,351,123	09/27/94	Spahlinger			
CC	5,359,413	10/25/94	Chang et al.			
CD	5,365,338	11/15/94	Bramson			
CE	5,412,471	05/02/95	Tada et al.			
CF	5,459,575	10/17/95	Malvern			
CG	5,469,257	11/21/95	Blake et al.			

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OTHER DOCUMENTS

(Including Author, Title, Date, Pertinent Pages Etc.)

CH	Burns, et al., "Excess Noise in Fiber Gyroscope Sources", IEEE Photonics Technology Letter, Vol 2, No. 8, August 1990, pp. 606-608.
CI	Clark et al., "Application of a PLL and ALL Noise Reduction Process in Optical Sensing System," <i>IEEE Transactions on Industrial Electronics</i> , Vol. 44, No. 1, February 1997, pp. 136-138
CJ	Dagenais et al., "Low-Frequency Intensity Noise Reduction for Fiber-Optic Sensor Applications," <i>Optical Fiber Sensors Conference</i> , 1992, January 29-31, pp. 177-180

EXAMINER

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CK	5,469,267	11/21/95	Wang			
CL	5,471,301	11/28/95	Kumagai et al.			
CM	5,493,396	02/20/96	Sewell			
CN	5,500,909	03/19/96	Meier			
CO	5,504,684	04/02/96	Lau et al.			
CP	5,552,887	09/03/96	Dyott			
CQ	5,559,908	09/24/96	August, et al.			
CR	5,654,906	08/05/97	Youngquist			
CS	5,655,035	08/05/97	Burmenko			
CT	5,682,241	10/28/97	Mark et al.			
CU	5,701,177	12/23/97	Kumagai et al.			
CV	5,701,376	12/23/97	Shirasaki			
CW	5,767,509	06/16/98	Cardova et al.			
CX	5,781,675	07/14/98	Tseng et al.			
CY	5,854,864	12/29/98	Knoesen et al.			
CZ	5,898,496	04/27/99	Huang et al.			
DA	5,946,097	08/31/99	Sanders et al.			
DB	5,987,195	11/16/99	Blake			

OTHER DOCUMENTS

(Including Author, Title, Date, Pertinent Pages Etc.)

DC	Dupraz, J.P., "Fiber-Optic Interferometers for Current Measurement: Principles and Technology", Alsthom Review No. 9: 29-44 (December 1987).
DD	Frosio, G. and Dändliker, "Reciprocal Reflection Interferometer for a Fiber-Optic Faraday Current Sensor", Applied Optics 33 (25): 6111-6122 (September 1, 1994).
DE	Gronau Yuval et al.; "Digital Signal Processing For An Open-Loop Fiber-Optic Gyroscope", Applied Optics, Optical Society of America, Washington, U.S., vol. 34, no. 25, 1 September 1995, pgs. 5849-5853

EXAMINER

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DF	6,025,915	02/15/00	Michal, et al.			
DG	6,047,095	04/04/00	Knoesen et al.			
DH	6,075,915	6/13/00	Koops et al.			
DI	6,148,131	11/14/00	Geertman			
DJ	6,163,632	12/19/00	Rickman et al.			
DK	6,185,033	02/06/01	Bosc et al.			
DL	6,208,775	03/27/01	Dyott			
DM	6,233,371	05/15/01	Kim et al.			
DN	6,301,400	10/09/01	Sanders			
DO	6,351,310	02/26/02	Emge et al.			
DP	6,370,289	04/09/02	Bennett			
DQ	6,389,185	01/08/01	Meise et al.			
DR	6,396,965	11/22/00	Anderson			

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 Technology Center 2100

OTHER DOCUMENTS

(Including Author, Title, Date, Pertinent Pages Etc.)

DS	Killian M. Kevin; "Pointing Grade Fiber Optic Gyroscope", IEEE AES Systems Magazine, pp. 6-10 (July 1994)
DT	LaViolette and Bossler; "Phase Modulation Control for An Interferometric Fiber Optic Gyroscope", IEEE Plan 90, Position Location and Navigation Symposium, Las Vegas, (March 20-23, 1990)
DU	Lefevre, "The Fiber-Optic Gyroscope", Artech House, Boston, pp. 29-30 (1993)
DV	McCallion and Shimazu; "Side-Polished Fiber Provides Functionality and Transparency", Laser Focus World, 34 (9): S19- S24, (September 1, 1998)
DW	Moeller and Burns, "1.06 μ m All-fiber Gyroscope with Noise Subtraction, Proceedings of the Conference on Optical Fiber Sensors", IEEE-OSA, Monterey, CA, 1992, pp. 82-85
DX	Moeller and Burns, "Observation of Thermal Noise in a Dynamically Biased Fiber-Optic Gyro", Optical Letters, 1996, Vol. 21, pp. 171-173.
EXAMINER	DATE CONSIDERED

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Nikos Drakos, "Circular Polarization States for Light, and Quarter-Wave Plates," *Computer Based Learning Unit, University of Leeds* (March 2, 1998)

Ono et al.; "A Small -Sized, Compact, Open-loop Fibre-Optic Gyroscope with Stabilized Scale Factor", *Meas. Sci. Technol.* 1: 1078-1083, (1990)

Polynkin et al.; "All-Optical Noise-Subtraction Scheme for a Fiber-Optic Gyroscope", *Optics Letters*, 25(3): 147-149, (February 1, 2000)

Rabelo et al.; "SNR Enhancement of Intensity Noise-Limited FOGs", *Journal of Lightwave Technology* 18(12):2146-2150 (December 2000)

Short, S. et al., "Elimination of Birefringence Induced Scale Factor Errors in the In-Line Sagnac Interferometer Current Sensor", *Journal of Lightwave Technology* 16 (10): 1844-1850 (October 1998).

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